The evaluation of key visual elements of pictograms to label medications

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INTRODUCTION

- Poor health literacy reduces the ability of individuals to understand the instructions on medication labels1
- This results in poor adherence to medical regimens & poor health outcomes2
- Pictograms improve understanding and recall of medication instructions in patients with poor literacy3

METHOD

- 21 categories of counseling instructions were selected
- Pictograms were searched for all 21 categories: take with water, take with food, take one tablet, take two tablets, take the medicine in the morning, take at night, take on an empty stomach, shake the bottle before use, keep out of reach of children, keep in the refrigerator, shake the bottle before use, 8 keep out of reach of children, 9 keep in the refrigerator, 5 for rectal use only, 4 for topical use only, 16 do not take if pregnant, 14 do not take if breastfeeding, 10 do not take if driving, 21 an inhaler with a spacer device, 4 for topical use, 14 ear drops and 10 eye drops
- Common visual elements in the pictograms were identified
- Working group (WG) of 8 participants completed an online series of questions & qualitative assessment
- Qualitative assessment evaluated the clarity of the pictogram & whether all the visual elements were present in the pictogram required to understand the instruction
- Average percentage of ‘yes’ responses was calculated for each question in the assessment
- Pictograms which received < 75% were identified as missing the key visual elements
- A set of instructions stating how the new pictogram should be designed was validated by the WG
- A new pictogram was designed for all 10 categories using only the key visual elements

OBJECTIVE

- To identify the key visual elements of 21 different categories of pictogram instructions used to label medications or supplement counselling information in Patient Information Leaflets
- Design a new set of pictograms which contain all the key visual elements identified

RESULTS

- Total of 188 pictograms were found for all 21 categories
- Following number of pictograms were found for each category: 13 take with water, 13 take with food, 3 take one tablet, 5 take two tablets, 10 take in the morning, 16 take at night, 5 take on an empty stomach, 10 shake the bottle before use, 8 keep out of reach of children, 9 keep in the refrigerator, 5 for rectal use only, 4 for topical use only, 16 do not take if pregnant, 14 do not take if breastfeeding, 10 do not take if driving, 21 an inhaler with a spacer device, 4 for topical use, 14 ear drops and 10 eye drops
- Pictograms found are intended for clinical practice in various countries: Canada, Canada (first nations), US, Japan, Gabor, South Africa, China, Australia (aboriginal community) Europe, & Mexico
- This was a student project being conducted over a short period of time therefore only 10 categories were evaluated
- 108 were retained for the 10 categories: to be taken with water, to be taken with food, keep in the refrigerator, shake the bottle before use, do not take with alcohol, keep out of reach of children, do not take if pregnant, take one tablet, ear drops & eye drops
- 50% (54/108) of pictograms scored less than 75% & 50% (54/108) scored greater than 75%
- Common visual elements missing from these pictograms were using an action to demonstrate the counselling instruction & illustration of medication
- 40% (43/108) were missing the action & 44% (47/108) did not illustrate any medication

DISCUSSION/CONCLUSION

- An action can be used to illustrate a counselling instruction
- The action must clearly relate to the medication illustrated in the pictogram
- Graphical clarity of the pictogram will determine how well it is understood
- When a new pictogram is designed only key visual elements should be incorporated

FUTURE WORK

- Greater number of participants will be recruited in the WG
- Remaining 11 categories will be evaluated using the same process
- Improve the draft pictograms
- A new pictogram will be designed for the remaining categories